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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,262	09/30/2002	Michael J. Scaggs	1443.01	5670

28584 7590 07/28/2005

STALLMAN & POLLOCK LLP  
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SAN FRANCISCO, CA 94111

EXAMINER
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BUEKER, RICHARD R

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/065,262

Applicant(s)

SCAGGS, MICHAEL J.

Examiner

Richard Bueker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-88 is/are pending in the application.
- 4a) Of the above claim(s) 21-36 and 56-88 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 37-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/6/03; 6/1/04; 3/1/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 16, the phrase "the fluid conduit means" is vague and indefinite because it lacks proper antecedent basis. In claim 17, the phrases "a secondary reservoir" and "a secondary control valve" are vague and indefinite because no primary reservoir or control valve is recited.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 17-20, 37 and 55 are rejected under 35 U.S.C. 102(a) or 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Roth (Novel technique for high-quality microstructuring with excimer lasers) (Fig. 2) or Borden (6,066,032) (the Fig) each of whom discloses a laser processing apparatus in which excess fluid is filtered and recycled, and a control valve is disposed between a reservoir and a fluid conduit connected to a nozzle.

Claims 1-10, 12-13, 15, 37-53 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tam (J. Appl. Phys.,

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April 1992) (Fig. 4) who discloses a laser processing apparatus comprising a fluid conduit and flow control means which atomizes a liquid and supplies the atomized vapor to a substrate to be processed. The nozzle of Tam is coupled to a reservoir of liquid water for propelling a fine spray of vapor of the liquid water onto the workpiece. Regarding claim 4, the copper tube of Fig. 4 of Tam is a fluid conduit as claimed and the burst gas inlet is a propellant conduit adapted to discharge propellant. Limitations such as the type of propellant gas recited in claims 7-10, the thickness of the liquid layer on the workpiece recited in claims 43-45, and the pressure recited in claims 51 and 52 are process type limitations and are in effect recitations of intended use of the claimed apparatus. The apparatus of Tam is inherently capable of being so used. Regarding the computer processor recited in claims 12, 13 and 15, Tam's timing generator and laser trigger means is inherently or at least obviously a microprocessor based controller.

Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tam (J. Appl. Phys., April 1992) taken in further view of Zhu (Laser ablation of solid substrates in a water-confined environment) (see page 1397, col. 1, lines 24-26) or Zapka (efficient pulsed laser removal of 0.2  $\mu\text{m}$  sized particles from a solid surface) (see page 2218, col. 1, last para.). Zhu teaches that water vapor condensation processes can form films of 50  $\mu\text{m}$  thicknesses, which indicates that Tam's water vapor condensation process would inherently be capable of forming 50  $\mu\text{m}$  water films. Also, Zapka teaches that a water vapor condensation process can be controlled to provide a desired water film thickness. Therefore, one skilled in the art would have considered

Tam's water vapor condensation means to be inherently or at least obviously capable of forming a 50  $\mu\text{m}$  thick water film.

Claims 12,13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tam (J. Appl. Phys., April 1992) taken in further view Elliot (5,669,979) (see Fig 15, for example), who teaches the use of a computer controller to control all aspects of a laser processing apparatus. If for argument's sake, Tam's apparatus did not include a computer processor as recited in claims 12, 13 and 15 it would have been obvious to automate the apparatus of Tam by providing it with a computer controller in the manner illustrated by Elliot to improve its efficiency of operation.

Claims 4-5 and 37-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tam (J. Appl. Phys., April 1992) taken in further view of Roth (Specific Surface Treatment by Laser Irradiation Under Fluid Films), Uziel (6,827,816) and Drzal (6,565,927). Roth (see Fig. 2, for example), Uziel (see Fig. 3 and col. 5, lines 27-39, for example) and Drzal (see Fig. 1 and col. 9, lines 19-27, for example) are cited for their teachings regarding means for spraying an atomized liquid onto a workpiece to form a thin film of liquid on the workpiece. It is noted that Uziel specifies steam spraying, and steam is an atomized liquid. If, for argument's sake, the spray nozzle of Tam were not considered to inherently be an atomizing means as recited in claim 5 or for propelling a fine spray of the liquid as recited in claim 37, it would have at least been obvious to provide a laser processing apparatus of the type disclosed by Tam with an atomizing means and/or a nozzle for propelling a fine spray of liquid, because Roth,

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Uziel and Drzal teach that a thin layer of liquid as desired by Tam can be provided by a fine liquid sprayer.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tam (J. Appl. Phys., April 1992) taken in further view of Roth (Specific Surface Treatment by Laser Irradiation Under Fluid Films), Uziel (6,827,816) and Drzal (6,565,927) for the reasons discussed in the preceding paragraph rejection, and taken in further view of Elliot (5,669,979). It is noted that Uziel (see Fig. 3 and col. 5, lines 27-39, for example) teaches the step of directing a steam pulse from tube 70 onto a workpiece, followed by a dry gas flow, which is a propellant, onto the workpiece from the tube 70. It would have been obvious to modify the apparatus of Tam to practice this process suggested by Uziel, and it also would have been obvious to use a computer controller of the type taught by Elliot to control this process suggested by Uziel.

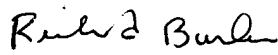
Claims 1-4 and 6-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Elliot (5,669,979) (see Fig 15, for example) who discloses a laser processing apparatus including a fluid vacuum coupled to a computer processor for controlling all aspects of the operation of the apparatus. The apparatus of Elliot includes a drainage conduit for filtering and recirculating excess fluid (see Fig. 11 and col. 17, lines 39-48 and col. 20, lines 52-61). Elliot teaches (col. 2, lines 22-36) that his apparatus can provide sequential flows of separate fluids, which reads on the sequential flows recited in applicant's claim 16.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parvis Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Richard Bueker  
Primary Examiner  
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